

RecMind: Large Language Model Powered Agent For Recommendation

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Abstract

While the recommendation system (RS) has advanced significantly through deep learning, current RS approaches usually train and fine-tune models on task-specific datasets, limiting their generalizability to new recommendation tasks and their ability to leverage external knowledge due to model scale and data size constraints. Thus, we designed an LLM-powered autonomous recommender agent, RecMind, which is capable of leveraging external knowledge, utilizing tools with careful planning to provide zero-shot personalized recommendations. We propose a Self-Inspiring algorithm to improve the planning ability. At each intermediate step, the LLM self-inspires to consider all previously explored states to plan for the next step. This mechanism greatly improves the model's ability to comprehend and utilize historical information in planning for recommendation. We evaluate RecMind's performance in various recommendation scenarios. Our experiment shows that RecMind outperforms existing zero/few-shot LLM-based recommendation baseline methods in various tasks and achieves comparable performance to a fully trained recommendation model P5.